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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,934	08/15/2001	Yuu Ishii	14998.280	1135

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EXAMINER

KIM, RICHARD H

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/929,934

Applicant(s)

ISHII ET AL.

Examiner

Richard Kim

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-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claim 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In this case “optionally” indicates that the step of ultraviolet irradiation processing and heat trimming may not be performed. Independent claim 1, however, indicates that such steps are indeed performed. Therefore, claim 4 does not further limit independent claim 1.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Examiner questions that if the optical properties are predetermined, then carrying out the UV processing and the heating trimming processing an arbitrary number of times and in an arbitrary sequence is contradictory. Having the optical properties predetermined would require a certain set sequence and order of the steps, and therefore would not be arbitrary.

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3. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case the term “optionally” indicates that the steps of UV irradiation processing and heat trimming processing can or cannot be performed. Therefore “optionally” renders the claim indefinite.

4. Claim 4 rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claim 4 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in specification page 10, lines 15-25. In that paper, applicant has stated that the transmitted light, reference light and the reflected light is monitored, or that the one of either the reflected light and the transmitted light can be monitored in addition to the reference light. This statement indicates that the invention is different from what is defined in the claim(s) because what is claimed indicates that another combination in which either the reflected light, transmitted light or reference light is monitored.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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2. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima et al. (US 5,949,934) in view of Tsuda et al. (US 6,289,154 B1), Nishiki et al. (US 6,456,762 B1), and Starodubov (US 6,222,973 B1).

Referring to claim 1, Shima et al. discloses a method comprising the steps of loading hydrogen in a material optical fiber for forming the optical fiber grating in order to increase the photosensitivity of the optical fiber when necessary (see col. 15, lines 54-62); forming a grating part having a periodic refractive index distribution by irradiating an optical fiber along the longitudinal direction by ultraviolet light at a predetermined period (see col. 15, lines 43-53) and carrying out dehydrogenation when necessary (see col. 16, lines 1-12). However, the reference does not disclose carrying out at least once uniform ultraviolet irradiation processing that irradiates the grating part as a whole with ultraviolet light.

Tsuda et al. discloses a method of carrying out at least once uniform ultraviolet irradiation processing that irradiates the grating part as a whole with ultraviolet light (see col. 20, lines 33-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out at least once uniform ultraviolet irradiation processing that irradiates the grating part as a whole with ultraviolet light since one would be motivated to “reduce the clad layer mode combination loss caused by the first irradiation” (see col. 8, lines 13-14).

Shima et al. further does not disclose carrying out at least once heat trimming processing that uniformly heats the grating part as a whole at a predetermined temperature and time.

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Nishiki et al. discloses a method of carrying out at least once heat trimming processing that uniformly heats the grating part as a whole at a predetermined temperature and time (see col. 11, lines 50-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out at least once heat trimming processing that uniformly heats the grating part as a whole at a predetermined temperature and time since one would be motivated to precisely adjust the reflection characteristics of the grating (see col. 2, lines 9-10).

Moreover, Shima et al. does not disclose the step of carrying out final annealing processing that heats the grating part to a uniform temperature for a predetermined period in order to stabilize the properties of the grating part.

Starodubov discloses a method of carrying out final annealing processing that heats the grating part to a uniform temperature for a predetermined period in order to stabilize the properties of the grating part (see col. 6, lines 25-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to carry out final annealing processing that heats the grating part to a uniform temperature for a predetermined period in order to stabilize the properties of the grating part in order to increase “to increase the mechanical strength of the coating” (see col. 5, lines 59-65).

Referring to claim 2, Shima et al., Tsuda et al., Nishiki et al., and Starodubov disclose the method previously recited. However, Shima et al. does not disclose the method wherein before or after the uniform irradiation processing, heat trimming processing is carried out at least once by uniformly heating the grating part as a whole in order to adjust optical properties.

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Nishiki et al. discloses a method wherein heat trimming processing is carried out at least once by uniformly heating the grating part as a whole in order to adjust optical properties (see col. 11, lines 50-61; col. 6, lines 25-27).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the heat trimming processing to be carried out at least once by uniformly heating the grating part as a whole in order to adjust optical properties since one would be motivated to precisely adjust the reflection characteristics of the grating (see col. 6, lines 25-27), thereby improving the precision of the fabrication process.

Referring to claim 3, Shima et al., Tsuda et al., Nishiki et al., and Starodubov disclose the method previously recited. However, Shima et al. does not disclose that the uniform ultraviolet irradiation processing and the heat trimming processing are repeatedly carried out an arbitrary number of times and in an arbitrary sequence until predetermined optical properties of the optical fiber are obtained.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to repeatedly carry out the uniform ultraviolet irradiation processing and the heat trimming processing an arbitrary number of times and in an arbitrary sequence until predetermined optical properties of the optical fiber are obtained since one would be motivated to precisely adjust the reflection characteristics of the grating (see col. 6, lines 25-27), thereby improving the precision of the fabrication process.

Referring to claim 4, Shima et al., Tsuda et al., Nishiki et al., and Starodubov disclose the method previously recited. However, Shima et al. does not disclose that the uniform ultraviolet irradiation processing and the heat trimming processing are optionally carried out while

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monitoring the transmitted light, or reflected light of the optical fiber grating, and the reference light.

Tsuda et al. discloses monitoring the reflected light of the optical fiber grating (see col. 1, lines 22-36).

It would have been obvious to one having ordinary skill in the art at the time the invention was made for the uniform ultraviolet irradiation processing and the heat trimming processing to be optionally carried out while monitoring the transmitted light, or reflected light of the optical fiber grating, and the reference light since one would be motivated to monitor an optical system to ensure proper function (see col. 1, lines 22-26).

Conclusion

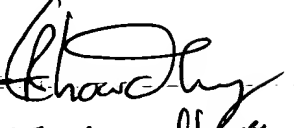
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard H Kim whose telephone number is (703)305-4791. The examiner can normally be reached on 9:00-6:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on (703)305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Richard H Kim
Examiner
Art Unit 2871

RHK


T-Choudhury
Primary Examiner